

Study Guide

For use with pages 41–46

GOAL Multiply and divide integers.**MULTIPLYING AND DIVIDING INTEGERS**

The product (or quotient) of two integers with the *same* sign is *positive*.

The product (or quotient) of two integers with *different* signs is *negative*.

The product of any integer and 0 is 0.

The quotient of 0 and any nonzero integer is 0.

EXAMPLE 1 Multiplying Integers

a. $-5(-10) = 50$

Same sign: Product is positive.

b. $-9(9) = -81$

Different signs: Product is negative.

c. $-18(0) = 0$

The product of any integer and 0 is 0.

EXAMPLE 2 Multiplying Integers

Your uncle owns 90 shares of stock A and 130 shares of stock B. In one day, the price per share changed by +\$3 for stock A and −\$2 for stock B. Find the total change in value of your uncle's stock.

Solution

$$\begin{array}{l}
 \boxed{\begin{array}{c} \text{Total} \\ \text{change} \end{array}} = \boxed{\begin{array}{c} \text{Stock A} \\ \text{shares} \end{array}} \cdot \boxed{\begin{array}{c} \text{Change in} \\ \text{1 share} \end{array}} + \boxed{\begin{array}{c} \text{Stock B} \\ \text{shares} \end{array}} \cdot \boxed{\begin{array}{c} \text{Change in} \\ \text{1 share} \end{array}} \\
 = 90(3) + 130(-2) \quad \text{Substitute values.} \\
 = 270 + (-260) \quad \text{Multiply.} \\
 = 10 \quad \text{Add.}
 \end{array}$$

Answer: The total change in value was 10. The value of the stocks increased by \$10.

EXAMPLE 3 Dividing Integers

a. $-63 \div (-9) = 7$

Same sign: Quotient is positive.

b. $144 \div (-12) = -12$

Different signs: Quotient is negative.

c. $0 \div (-8) = 0$

The quotient of 0 and any nonzero integer is 0.

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Exercises for Examples 1–3

Find the product or quotient.

1. $18(3)$
2. $78 \div (-6)$
3. $-66 \div (-22)$
4. $-8(-11)$
5. $\frac{-240}{12}$
6. $9(-15)$
7. A deep sea diver is at a depth of 9 feet below sea level. The diver's depth is changing by -5 feet per second. What is the diver's position after 15 seconds?

EXAMPLE 4 Finding a Mean

The table shows the daily minimum temperature in Nome, Alaska for 7 consecutive days in December. Find the mean of the temperatures.

Day	T	W	Th	F	S	S	M
Low temperature (°F)	3	1	-2	-6	-11	-7	-20

Solution

To find the mean of the temperatures, first add the temperatures. Then divide by 7, the number of temperatures.

$$\begin{aligned}\text{Mean} &= \frac{3 + 1 + (-2) + (-6) + (-11) + (-7) + (-20)}{7} \\ &= \frac{-42}{7} \\ &= -6\end{aligned}$$

Answer: The mean of the temperatures is -6°F .

Exercises for Example 4

Find the mean of the data.

8. $-15, 5, -22, -4, -9, -37, 11, -9$
9. $-64, -23, -17, 10, -36, -8, 42, -79, 13$